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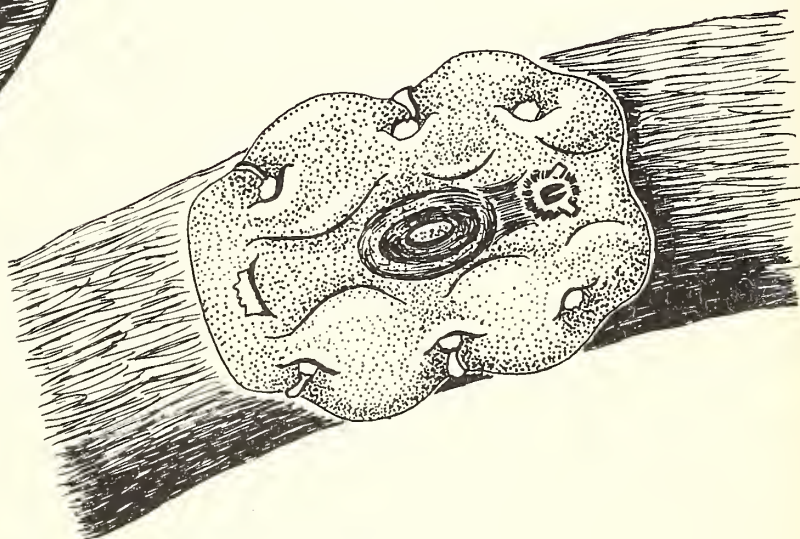
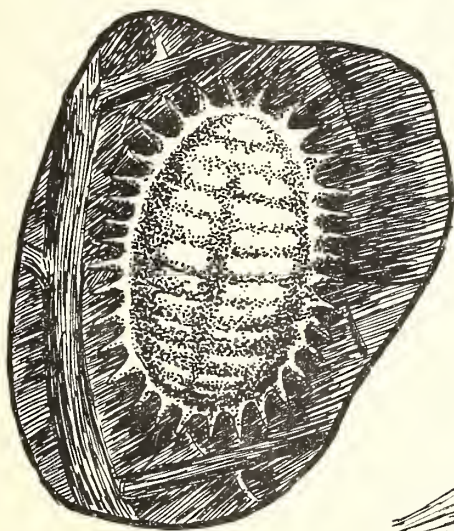
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**TAXONOMIC MATERIAL  
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# **COCCOIDEA**



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## C O N T E N T S

1. Genera and Species of Coccidae in the United States
2. European Species of Carulaspis MacGillivray
3. Selected Coccoidea References
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GENERA AND SPECIES OF COCCIDAE  
IN THE UNITED STATES \*

This list contains 23 genera and 86 nominate species. Two undescribed species were included in the list. Also listed are three synonyms that were considered good species until recently.

<u>Genus</u>	<u>No. of Species</u>	<u>Genus</u>	<u>No. of Species</u>
<u>Ceroplastes</u>	11	<u>Neolecanium</u>	2
<u>Ceroplastodes</u>	3	<u>Parasaissetia</u>	1
<u>Coccus</u>	8	<u>Philephedra</u>	1
<u>Eriopeltis</u>	2	<u>Physokermes</u>	6
<u>Eucalymnatus</u>	1	<u>Protopulvinaria</u>	1
<u>Exaeretopus</u>	1	<u>Pseudokermes</u>	1
<u>"Filippia"</u>	1	<u>Pseudophilippia</u>	1
<u>Inglisia</u>	2	<u>Pulvinaria</u>	16, 1 nsp
<u>Kilifia</u>	1, 1 nsp	<u>Saissetia</u>	4
<u>Lecanium</u>	10	<u>Sphaerolecanium</u>	1
<u>Lecanopsis</u>	1	<u>Toumeyella</u>	9
<u>Mesolecanium</u>	1		

CEROPLASTES

Distribution by States

<u>C. brachyurus</u> Cockerell	AZ, AL
<u>C. ceriferus</u> (Fabricius)	AL, AR, DC, FL, GA, IL, LA, MD, MS, NC, NJ, NY, OK, SC, TX, VA
<u>C. cirripediformis</u> Comstock	AL, AZ, CA, DC, FL, GA, LA, MD, MO, MS, NC, OH, PA, SC, TX
<u>C. cistudiformis</u> Townsend and Cockerell	CA (southern)
<u>C. dugesii</u> Lichtenstein	FL
<u>C. floridensis</u> Comstock	DC, FL, GA, LA, MD, MO, MS, NC, NM, NY, SC, TX, VA
<u>C. irregularis</u> Cockerell	AZ, CA, CO, ID, NM, NV, TX
<u>C. nakaharai</u> Gimpel	FL
<u>C. rubens</u> Maskell	FL
<u>C. sinensis</u> Del Guercio	CA (Santa Clara Co., San Mateo Co., Alameda Co.), NC (Carteret Co.), VA (Southampton Co.)
<u>C. utilis</u> Cockerell	FL (Big Pine Key, Key West)

\*Except Hawaii

## CEROPLASTODES

<u>C. acaciae</u> Cockerell	AZ, CA, TX
<u>C. daleae</u> Cockerell	NM
<u>C. deani</u> Lawson	KS

## COCCUS

<u>C. acutissimus</u> (Green)	FL
<u>C. elongatus</u> (Signoret)	AL, CA, DC, DE, FL, GA, IL, LA, MA, MD, MO, NY, OH, PA, TX
<u>C. hesperidum</u> Linnaeus	Widespread
<u>C. mangiferae</u> (Green)	FL, TX
<u>C. pseudoheperidum</u> (Cockerell)	CA, DC, FL, IN, MA, MD, MO, NC, NH, NJ, NY, PA
<u>C. pseudomagnoliarum</u> (Kuwana)	AZ, CA
<u>C. viridis</u> (Green)	FL, (DC, NY)
<u>C. capparidis</u> (Green)	FL

## ERIOPELTIS

<u>E. coloradensis</u> Cockerell	CO, ND
<u>E. festucae</u> (Fonscolombe)	MA, ME, NB, NC, NH, NY, PA, VA

## EUCALYMNATUS

<u>E. tessellatus</u> (Signoret)	AR, CA, DC, FL, IN, IL, KS, LA, MA, MD, MO, MS, NJ, NY, OH, PA, SC, TN, TX
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## EXAERETOPUS

<u>E. caricis</u> Ehrhorn	CA (Mt. Shasta)
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## FILIPPIA (LICHTENSIA)

F. lycii (Cockerell) AZ, CA, NM  
(Steinweden (1929) considers this  
to belong to the Ctenochiton.)

## INGLISIA

I. malvacearum Cockerell AZ  
(Congeneric with F. lutea (Cockerell).)  
Not an Inglisia.)

I. vitrea (Cockerell) FL  
(Not an Inglisia. Genus?)

## KILIFIA

K. acuminata (Signoret) DC, FL, MO, NY, TX

K. new species TX

## LECANIUM+

L. caryae Fitch CT, IN, KS, MA, ME, MI, MS, NY, NJ,  
OH, PA, VA

L. cerasorum Cockerell CA, DE, MD, PA, VA, WA

L. corni Bouché\* Widespread

L. excrescens Ferris CA, CT, OR

L. fletcheri Cockerell\* AL, AR, CO, CT, DC, IA, ID, IL, IN,  
KS, KY, LA, MA, MD, MI, MN, MO, NJ,  
NY, OH, OK, OR, PA, RI, SC, TX, VA,  
WA, WI, WV

L. kunoensis Kuwana CA

L. nigrofasciatum Pergande AL, AR, CT, DC, DE, FL, GA, IL, IN,  
(Not a Lecanium. Probably KY, LA, MA, MD, MI, MO, MS, NC, NJ,  
belongs in the Mesolecanium.) NY, OH, OK, PA, SC, TN, TX, VA, WV

+The name Lecanium must be replaced by another name.

\*These three species (see next page) with L. cerasifex as defined by  
Richards (1958) cannot be satisfactorily separated morphologically and  
have been treated by Williams and Kosztarab (1972) as L. corni complex.

<u>L. persicae</u> (Fabricius)	AL, CA, DC, GA, IN, MA, MD, MO, NC, NJ, NY, OH, OR, PA, RI, SC, VA
<u>L. quercifex</u> Fitch*	AL, AR, AZ, CA, CO, CT, DC, FL, GA, ID, IL, IN, MA, MD, ME, MI, MN, MS, NC, NJ, NM, NY, OH, OK, PA, RI, SC, SD TX, UT, VA, VT, WI
<u>L. pruinorum</u> Coquillett	CA, ID, NM, NV, TX, UT

#### LECANOPSIS

<u>L. lineolatae</u> King and Cockerell	MA The only record is that of the original collection. The specimens have not been seen.
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#### MESOLECANIUM

<u>M. phoradendri</u> (Cockerell)	AZ
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#### NEOLECANIUM

<u>N. cornuparvum</u> (Thro)	AL, CT, FL, GA, IN, KY, LA, MD, MS NC, NY, OH, PA, SC, VA, WV
<u>N. imbricatum</u> (Cockerell) (Belongs in the <u>Toumeyella</u> .)	AZ, NM

#### PARASAISETIA

<u>P. nigra</u> (Nietner)	AL, CA, DC, FL, KS, LA, MD, MO, NY, OH, OK, PA, TX, VA
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#### PHILEPHEDRA

<u>P. ephedrae</u> (Cockerell)	CA, NM, TX
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#### PHYSOKERMES

<u>P. coloradensis</u> Cockerell	CO, ID
<u>P. concolor</u> Coleman	CA, OR

<u>P. hemicryphus</u> Dalman*	DC, MD, NY, VA
<u>P. insignicola</u> (Craw)	CA
<u>P. piceae</u> (Schrank)*	CA, IA, ID, IN, MA, ME, MD, MN, MO, NH, NY, PA, WI
<u>P. taxifoliae</u> Coleman	CA, OR

#### PROTOPULVINARIA

<u>P. pyriformis</u> (Cockerell)	AL, CA, DC, FL, GA, LA, MS, NM, NY, SC, TX
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#### PSEUDOKERMES

<u>P. cooleyi</u> King	MT Described from <u>Picea</u> but there does not seem to be any other record. MacGillivray placed it in the <u>Pulvinaria</u> . Species not seen.
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#### PSEUDOPHILIPPIA

<u>P. quaintancii</u> Cockerell	AL, FL, GA, LA, MD, MS, NC, NJ, PA, SC, TN, VA
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#### PULVINARIA

<u>P. acericola</u> (Walsh and Riley)	AL, AR, CT, DC, GA, IN, LA, MD, MI, MS, NC, NY, OK, PA, SC, TN, TX, VA, WV
<u>P. amygdali</u> Cockerell	NM
<u>P. bigeloviae</u> Cockerell	CA, CO, ID, NM, UT
<u>P. elongata</u> Newstead (Misidentified as <u>P. iceryi</u> (Guerin).)	FL, GA, LA

\*The only Physokermes species recorded on spruce in the Eastern U.S. was P. piceae (Schrank) until Williams and Kosztarab (1972) recorded P. hemicryphus Dalman in Virginia. The records of P. hemicryphus in the other states are based on reexaminations of second stage females and young, adult females identified previously as P. piceae and examination of recently collected specimens. The descriptions and differentiating characters for these two species were published by Schmutterer (1956).

<u>P. citricola</u> Kuwana	CA, DC, MD, VA
<u>P. ericicola</u> McConnell	DC, FL, MD, NH, NY, VA
<u>P. floccifera</u> (Westwood)	CA, CT, DC, FL, GA, IL, IN, MA, MD, MO, NC, NJ, NY, OR, RI, SC, TX, VA, WA
<u>P. hydrangeae</u> Steinweden	CA, MA, NY, VA
<u>P. innumerabilis</u> (Rathvon) (Misidentified as <u>P. vitis</u> (L.).)	Widespread
<u>P. mesembryanthemi</u> (Vallot)	CA (Napa Co.)
<u>P. occidentalis</u> Cockerell (considered a synonym of <u>P. vitis</u> (L.).)	
<u>P. peninsularis</u> Ferris (considered a synonym of <u>P. urbicola</u> Cockerell.)	
<u>P. phaiae</u> Lull	CA, MA, NY
<u>P. pruni</u> Hunter	KS, TX
<u>P. psidii</u> Maskell	DC, FL, GA, MO, NY
<u>P. rhois</u> Ehrhorn	CA
<u>P. urbicola</u> Cockerell	FL, LA, TX
<u>P. vitis</u> (Linnaeus)	CA, CO, ID, MT, NY, OR, WA
<u>P. new species</u>	CA (Alameda Co.)

## SAISSETIA

<u>S. coffeae</u> (Walker)	AK, AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NB, NC, NH, NJ, NY, OH, OR, PA, SC, TN, TX, UT, VA, WA, WI
<u>S. miranda</u> (Cockerell and Parrott) (Misidentified as <u>S. oleae</u> (Barnard).)	AZ, CA, DC, FL, LA, MD, MO, NM, NY, OH, OK, PA, VA

S. neglecta De Lotto  
(Misidentified as S. oleae  
(Bernard).)

FL, LA

S. oleae (Olivier)

AZ, CA, CO, CT, DC, FL, KS, LA, MA,  
NJ, NM, NY, SC, WA

#### SPHAEROLECANIUM

S. prunastri (Fonscolombe)

NJ, NY, PA

#### TOUMEYELLA

T. cerifera Ferris

FL, LA, NC, VA

T. liriodendri (Gmelin)

CT, NY south to FL, west into the  
Mississippi River Valley, CA

T. mirabilis (Cockerell)

NM, TX

T. numismaticum Pettit and McDaniel  
(Synonym of T. parvicornis  
(Cockerell).)

T. parvicornis (Cockerell)

IA, MN, NB, ND, SD and east of the  
Mississippi River

T. pini (King)

CT, FL, GA, MD, MI, NY, PA, VA

T. pinicola Ferris

CA

T. quadrifasciata (Cockerell)

NM

T. turgida (Cockerell) (Probably  
a synonym of T. liriodendri  
(Gmelin).)

FL

T. virginiana Williams and  
Kosztarab

FL, GA, MD, VA



EUROPEAN SPECIES OF CARULASPIS MacGillivray  
(HOMOPTERA: DIASPIDIDAE)  
S. Nakahara, Entomologist

Carulaspis juniperi (Bouche), the "juniper scale", is a pest of junipers in North America. This and two other species are often intercepted from Europe on juniper and mistletoe.

The purpose of this paper is to aid the identifiers to recognize the species that occur in Europe and the Mediterranean area.

Borchsenius' catalogue lists C. taxicola (Vayssiere) from Algeria on Taxus. Because the available information concerning this species is inadequate, it is not included in the key.

The scale covers of the adult females of this genus are white, circular to oval and convex. The exuviae are central or subcentral and yellow.

Key to the Species

1. Submarginal dorsal macroducts present on the sixth abdominal segment . . . . . 2  
Submarginal dorsal macroducts absent from the sixth abdominal segment . . . . . 3
- 2(1). Gland spines present between the median lobes; median lobes well developed and separated from each other by distance approximately equal to the width of a lobe. On mistletoe. . . . . visci (Schrank)  
Gland spines absent between the median lobes; median lobes reduced and separated from each other by distance greater than width of a lobe. On juniper and cypress . . . . . atlantica (Lindinger)
- 3(1). Marginal macroduct present between the median lobes . . . . 4  
Marginal macroduct absent between the median lobes . . . . . minima (Targioni-Tozzetti)
- 4(3). Gland spines present between the median lobes; abdominal segments 2 and 3 each with less than ten submedial macroducts; segment 6 with two marginal macroducts . . . . juniperi (Bouché)  
Gland spines absent between the median lobes; abdominal segments 2 and 3 each with more than ten submedial macroducts; segment 6 with one marginal macroduct . . . silvestrii Lupo

Carulaspis atlantica (Lindinger)

Hosts: Callitris sp., Cupressus sp., Juniperus sp.

Distribution: Canary Islands, Morocco

Carulaspis juniperi (Bouché)

Commonly used synonyms: Diaspis carueli (Targioni-Tozzetti), D. visci Schrank, Carulaspis visci (Schrank)

Common name: Juniper scale

Hosts: Chamaecyparis sp., Cupressus sp., Cupressocyparis sp.,  
Juniperus sp., Libocedrus sp., Sequoia sp., Thuja sp.

Distribution: Algeria, Canada, Canary Islands, Chile, Europe,  
United States.

Intercepted from Europe.

Carulaspis minima (Targioni-Tozzetti)

Common name: Minute cypress scale

Hosts: Callitris sp., Chamaecyparis sp., Cupressus sp.,  
Juniperus sp., Thuja sp.

Distribution: Algeria, Argentina, Azores, Bermuda, Chile, Cuba,  
Erithrea, England, France, Greece, Italy, Morocco,  
Palestine, Portugal, Russia (Caucasia, Ukraine), Spain,  
Sweden, Uruguay, United States (Florida, California,  
Hawaii, Kansas, Louisiana, North Carolina, New Mexico,  
Oklahoma, Texas, Utah, Virginia, Washington)

Intercepted from Azores, Bermuda, France, England, Greece, Israel,  
Italy, Spain, Sweden.

Carulaspis silvestrii Lupo

Host: Juniperus sp.

Distribution: Italy



Carulaspis visci (Schrank)

Host: Viscum album

Distribution: Azores, Austria, Czechoslovakia, Germany, Greece,  
Hungary, Italy

Intercepted from Azores, Greece, Italy

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